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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
STAFIRA, MICHAEL PATRICK	
ART UNIT	**PAPER NUMBER**
2877	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/822,055	KIM ET AL.	
	Examiner	Art Unit	
	Michael P. Stafira	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-19 and 23-31* is/are allowed.

6)☒ Claim(s) *1-4,6-9,15 and 20-22* is/are rejected.

7)☒ Claim(s) *5,10-14 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/2/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 1, 2A, 2B, 3, 4A, 4B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rotation of the stage or the emitter(s) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings presented in the application show arrows for the movement of the emitter and the stage, but the arrows are straight lines in the Y direction and do not show a rotating motion.

Claim Objections

4. Claim 7 is objected to because of the following informalities: In claim 7, line 31 please delete "[rotary]" or just the brackets as the examiner is going to treat the claim as not having the [rotary] for examination purposes. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6-9, 15, 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Fairley et al. ('780).

Claim 1

Fairley et al. ('780) discloses an emitter (Fig. 5, Ref. 523) for irradiating lights to the particles, the object (Fig. 5, Ref. 501) being disposed on a stage (Fig. 5, Ref. 502) in a direction substantially parallel to a surface of the object (Fig. 5, Ref. 501); a driver for generating a relative motion between the emitter (Fig. 5, Ref. 523) and the object (Fig. 5, Ref. 501) for scanning the surface of the object (Fig. 5, Ref. 501) with the lights (Col. 10, lines 22-28); and a detector (Fig. 5, Ref. 304, 520) for detecting the lights emitted from the emitter (Fig. 5, Ref. 523) or lights scattered from the particle. (It is the position of the examiner that the way the claim is written, the object is parallel with the stage not the emitted light from the emitter, and further the specification fails to define "substantially parallel" being zero degrees or just parallel to the surface of the object. Therefore, the current prior art discloses the illumination angle can be between 5 degrees to 45 degrees which when the angle is 5 degrees is substantially parallel to the

surface since applicants specification fails to disclose otherwise.)

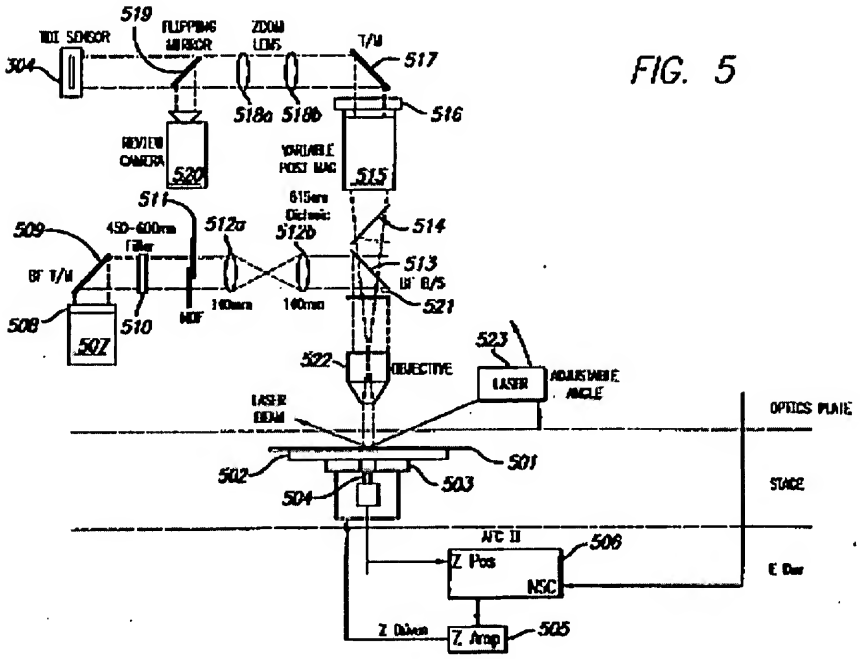

FIG. 5

Claim 2

Fairley et al. ('780) further discloses the driver is in communication with the emitter to move the emitter in a second direction, which is different from the direction of the emitted lights (Col. 10, lines 51-59).

Claim 3

Fairley et al. ('780) further discloses the driver is connected to the stage for moving the stage in a second direction, which is different from the direction of the emitted lights (Col. 10, lines 22-29).

Claim 4

The reference of Fairley et al. ('780) further discloses the detector (Fig. 1, Ref. 304, 507, 520) is located in a position which is opposite to the emitter and which is centered on the object (See Fig. 5).

Claim 6

Fairley et al. ('780) further discloses the object (Fig. 5, Ref. 501) comprises a bare wafer.

Claim 7

Fairley et al. ('780) discloses an emitter (Fig. 5, Ref. 523) for irradiating a first light and a second light to the particles (Col. 10, lines 51-59), the object (Fig. 5, Ref. 501) being disposed on a stage (Fig. 5, Ref. 502) in a first direction and a second direction which are substantially parallel to a surface of the object (Fig. 5, Ref. 501); a first driver for generating a relative motion between the emitter (Fig. 5, Ref. 523) and the object (Fig. 5, Ref. 501) for irradiating the first and second lights to the surface of the object (Fig. 5, Ref. 501); a second driver for generating a relative motion between the emitter (Fig. 5, Ref. 523) and the object (Fig. 5, Ref. 501) for scanning the surface of the object (Fig. 5, Ref. 501) with the first and second lights (Col. 10, lines 22-28); a detector (Fig. 5, Ref. 304, 520) for detecting the first and second lights emitted from the emitter or the first and second lights scattered from the particles, and for producing a first and second detection signals and a relative position signal between the emitter and the object (Fig. 5, Ref. 501); and a data processor for analyzing the first and second detection signals and the relative position signal between the emitter and the object from the detector to determine the position of the particles (Col. 9, lines 28-67).

Claim 8

Fairley et al. ('780) further discloses a display for displaying the position of the particles (Col. 10, lines 10-20).

Claim 9

Fairley et al. ('780) further discloses the object comprises a wafer (Fig. 5, Ref. 501).

Claim 15

Fairley et al. ('780) discloses the detector (Fig. 5, Ref. 304, 520) is located opposite to the emitter centered on the object (See Fig. 5).

Claim 20

Fairley et al. ('780) discloses irradiating a light from an emitter (Fig. 5, Ref. 523) to the particles on the object (Fig. 5, Ref. 501) in a direction substantially parallel to a surface of the object (Fig. 5, Ref. 501); generating a relative motion between the emitter (Fig. 5, Ref. 523) and the object (Fig. 5, Ref. 501) during irradiation of the light to scan the surface of the object (Fig. 5, Ref. 501) with the light (Col. 10, lines 21-28); and detecting the light irradiated from the emitter or the light scattered from the particles (Col. 7, lines 20-37).

Claim 21

Fairley et al. ('780) discloses the emitter moves in a second direction different from the direction of the light during an irradiation of the light (Col. 10, lines 51-59).

Claim 22

Fairley et al. ('780) further discloses the object moves in a second direction different from the direction of the light during the irradiation of the light (Col. 10, lines 21-28).

Allowable Subject Matter

7. Claims 17-19, 23-31 are allowed over the prior art of record.

8. Claims 5, 10-14, 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 17, the prior art fails to disclose or make obvious an apparatus for detecting particles located on an object having a first driver for generating a first relative motion between the first emitter and the object to scan the surface of the object by the first light; a second driver for generating a second relative motion between the second emitter and the object to scan the surface of the object by the second light; a detector for detecting the first and second emitted lights or the first and second lights scattered from the particles, and for generating first and second detection signals to determine positions of the particles; and a data processor for analyzing the first and second detection signals to determine positions of the particles, the first and second detection signals comprising a first relative position signal between the first emitter and the object and a second relative position signal between the second emitter and the object from the detector, and in combination with the other recited limitations of claim 17. Claims 18-19 are allowed by the virtue of dependency on the allowed claim 17.

Regarding claim 23, the prior art fails to disclose or make obvious a method for detecting particles located on an object having the steps of irradiating a first light from an emitter to the particles on the object in a first direction substantially parallel to a surface of the object; generating a first relative motion between the emitter and the object during irradiation of the first light to scan the surface of the object with the first light; detecting the first light irradiated from the emitter or a first light scattered from the particle; generating a relative motion between the emitter and the object; irradiating a second light from the emitter to the particles in a second direction that is different from the first direction and is parallel to the surface of the object; generating a second relative motion between the emitter and the object during irradiation of the

second light to scan the surface of the object with the second light; detecting the second light irradiated from the emitter or a second light scattered from the particles; and analyzing first and second detection signals and a relative position signal between the emitter and the object created from detecting the first and second lights to recognize a position of the particles, and in combination with the other recited limitations of claim 23. Claims 24-28 are allowed by the virtue of dependency on the allowed claim 23.

Regarding claim 29, the prior art fails to disclose or make obvious a method for detecting particles on an object having the steps of irradiating a first light from a first emitter to particles on the object in a first direction substantially parallel to a surface of the object; generating a first relative motion between the first emitter and the object in a third direction different from the first direction during irradiation of the first light to scan the surface of the object by the first light; detecting the first light irradiated from the emitter or a first light scattered from the particles; irradiating a second light from a second emitter to the particle in a second direction that is different from the first direction and is substantially parallel to the surface of the object; generating a second relative motion between the second emitter and the object in a fourth direction different from the second direction during irradiation of the second light to scan the surface of the object by the second light; detecting the second light irradiated from the emitter or a second light scattered from the particles; and analyzing first and second detection signals to determine the positions of the particles, the first and second detection signals comprising a relative position signal between the emitter and the object created from detecting the first and second lights, and in combination with the other recited limitations of claim 29. Claims 30-31 are allowed by the virtue of dependency on the allowed claim 29.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael P. Stafira
Primary Examiner
Art Unit 2877

April 13, 2006